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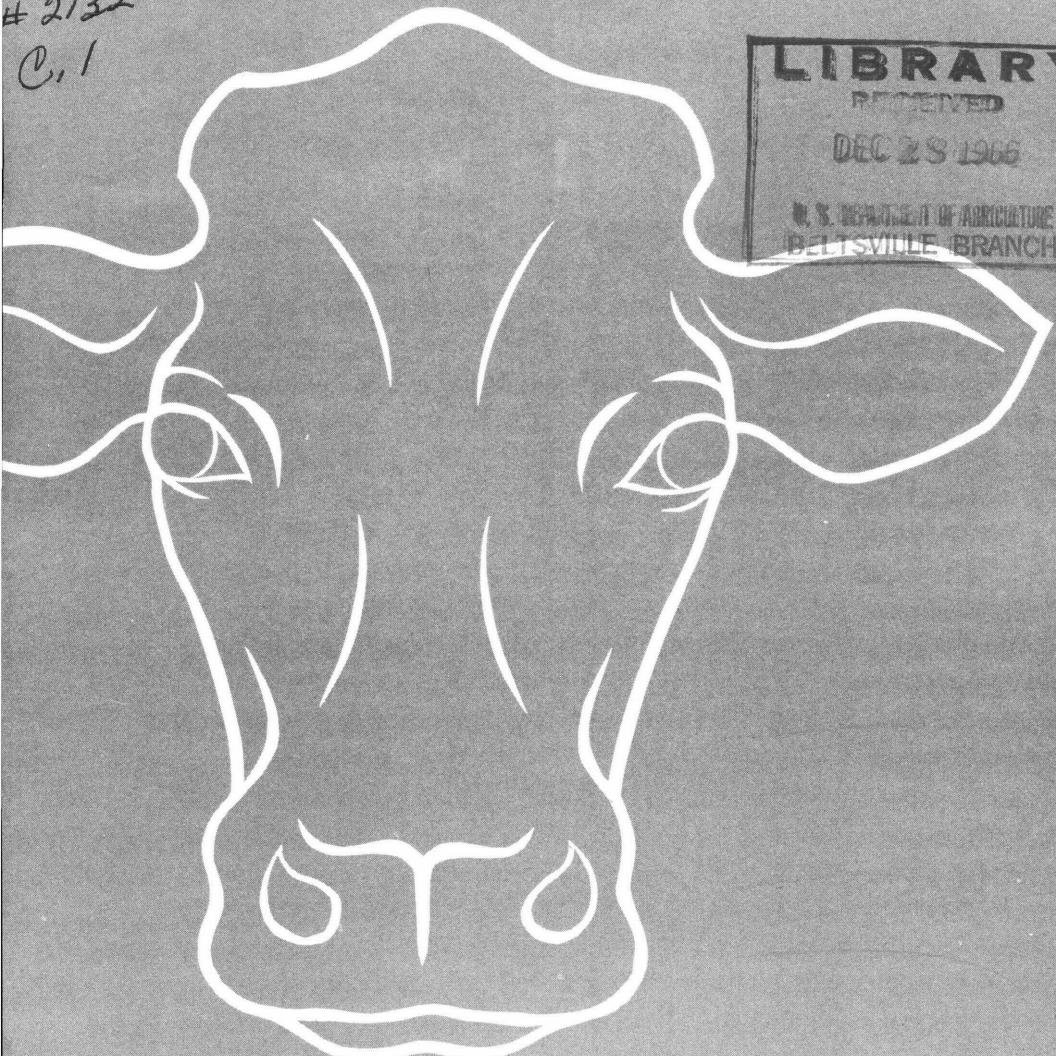
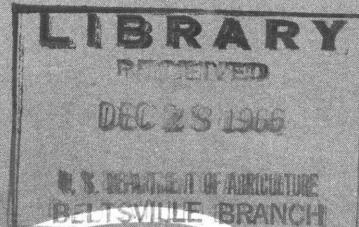
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IMPROVING YOUR DAIRY HERD —

Through the National Cooperative
Dairy Herd Improvement Program

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IMPROVING YOUR DAIRY HERD

—Through the National Cooperative Dairy Herd Improvement Program

Planned culling, feeding, and breeding are the ways to higher milk production for your dairy herd. Use all three.

- Cull unprofitable cows to avoid further loss from them.
- Feed to get the most profit from each cow.
- Breed to improve your herd's inherited producing capacity.

You can guess at how to cull, feed, and breed. But experience shows that most guesses are not good. It is easier and more profitable to use records.

To get the necessary records, join and participate in the National Co-operative Dairy Herd Improvement Program in your area; use records of each cow's performance to help you cull, feed, and breed.

CULLING—WITH RECORDS

Your herd—large or small—will be more profitable if you cull the lowest producers. Compare production costs of each cow. Use monthly records that show her pro-

duction and its value, cost of her feed, and income over feed cost.

How much milk or butterfat must a cow produce to be profitable? There is no easy answer to that question. Conditions vary; a profitable level of production on one farm or in one area may be unprofitable in another. But you can answer the question yourself by studying your herd records.

Each cow should return at least \$2 for each dollar's worth of feed she eats. By so doing she pays for her feed, the labor you expend on her, and a proportionate share of your overhead, interest on investment, and depreciation. A cow that returns less than \$2 for each dollar's worth of feed should be replaced with a higher producing cow as soon as possible.

If your production costs are moderate or low, or the price you get for milk or butterfat is high, you may net a small profit on a cow that produces no more than 200 pounds of butterfat per year. If your costs are high and prices low, a cow that produces as much as 300 to 500 pounds may not be profitable.

With feed and production records, you can determine the level of production below which you must cull to avoid financial loss—and to obtain the greatest returns for capital and labor invested.

You can arbitrarily set a production level that your cows must equal or exceed to remain in the herd. Perhaps you will cull a 3- or 4-year-old cow that fails to produce more than 350 pounds of butterfat per year, or a mature cow that fails to produce more than 400 pounds of butterfat per year. Or your culling deadline may be higher. Even though a cow returns a profit, a progressive dairyman will remove her from the herd any time she can be replaced by a more profitable cow.

Culling unprofitable cows from the herd helps you avoid further loss, but it does not recover the losses already incurred. Because of the cost of raising and keeping a heifer until she comes into milk, a heifer usually does not begin to return a net profit until the end of her second or third lactation. If a heifer proves to be a poor producer and must be culled during her first or second lactation, she never pays the cost of raising her. To prevent this, you must improve the breeding of your herd so that fewer heifers born will turn out to be poor producers.

FEEDING—WITH RECORDS

Your herd will produce milk and butterfat most efficiently if you properly feed each cow. For de-

tails on selecting an economical dairy ration, ask your county agricultural agent or write to your State agricultural college or to the U.S. Department of Agriculture.

Many cows are low or unprofitable producers simply because they are not given as much feed as they could convert into milk. But a cow also may be unprofitable if she is given more feed than she can use for milk production.

With production records as your guide, you can feed each cow at her most profitable level.

If you give a cow all the feed she can convert into milk and butterfat, she will produce at her maximum efficiency. However, many factors influence profits from milk production. If, for example, grain is high in price and milk is relatively low in price, it may be more profitable to feed less grain and depend more on roughage—even though less milk is obtained. If the price of milk is high and the price of feed is relatively low, usually it will pay you to feed grain at a heavier rate.

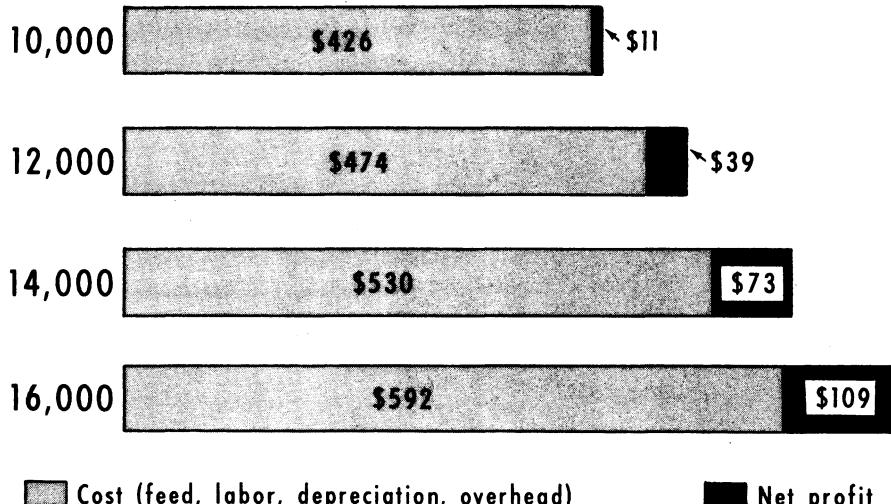
Whatever the ratio between the price of feed and the price of milk, the feed and production records will show the level of feeding you must follow to get the most profitable return from each cow in your herd.

BREEDING—WITH RECORDS

Regardless of how well a herd is fed and cared for, it cannot produce more than its inheritance enables it to produce. If, for example, the inherited producing capacity of your herd is limited to an average

HIGHER PRODUCTION — HIGHER PROFITS

MILK PER COW, pounds



Does your dairy herd show a profit each year? Do you have money left after paying for such production costs as feed, labor, housing, and interest on your investment? The answer depends on the price of milk as related to the cost of producing it.

The accompanying chart is based on official records for Holstein herds in the National Cooperative Dairy Herd Im-

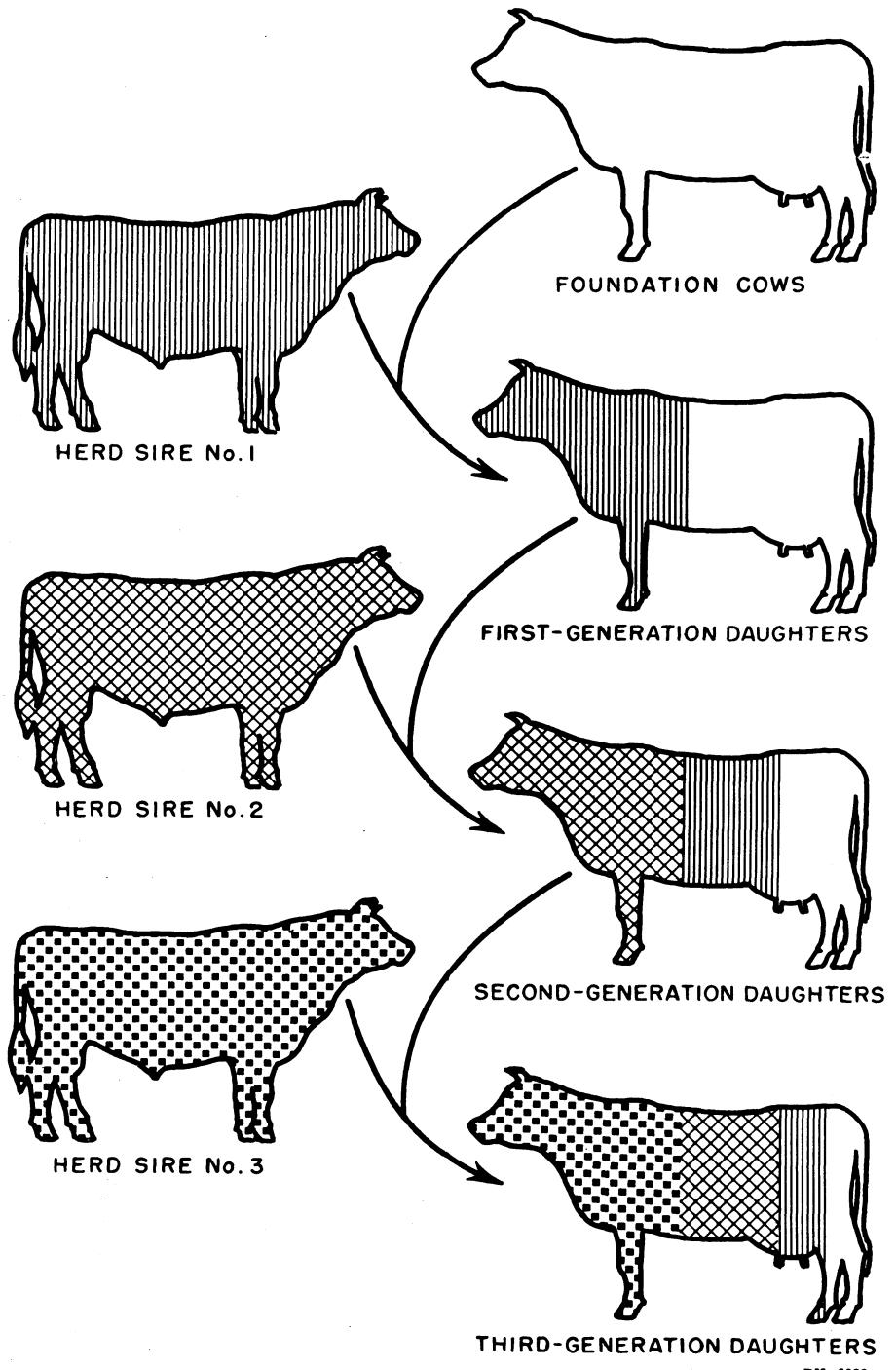
provement Program. Within the range shown, cost of producing each 1,000 pounds of milk decreases as the level of production increases. When production goes up, costs also rise, but at a slower rate. Because of this, your chances of making a profit—and the amount of profit—increase as each cow's production goes up.

of 12,000 pounds of milk per cow per year, no amount of extra feeding or better management will increase production.

After you cull your herd carefully and feed the remaining cows properly, you are ready for the next

and most important step in dairy-herd improvement—breeding to improve the inherited producing capacity of your herd.

The quickest and surest way to improve this capacity is through the use of a series of good sires.



How the influence of a succession of herd sires increases with each generation of daughters.

It often is said, "The bull is half the herd," because the daughters of a bull each receive half their inheritance from the bull and half from their respective dams.

In one generation, the sire contributes 50 percent to the genetic makeup of the new heifers in the herd. Seventy-five percent of the genetic makeup of the second generation is contributed by the sires used in succession. In only a few years of using a succession of good sires, the inheritance of your herd can be almost completely reconstructed.

Usually 20 to 25 percent of the cows in a herd are removed each year and replaced by first-calf heifers or purchased cows. In this way, every 4 to 5 years the herd is an entirely new group of animals. Unfortunately, most dairymen continue year after year to raise, for replacement purposes, heifer calves that are no better than, or are worse than, the cows they replace. If you carefully select herd sires, you will have not only a new herd, but, in a relatively few years, a greatly improved one.

DHIA records are used in analyzing the breeding progress made in many individual herds, with a view to finding improved strains and families from which desirable breeding stock may be selected. Association herds may therefore be looked on as a mammoth breeding herd of national importance—one that is improved constantly and from which breeding stock is gradually dispersed to improve the thousands of other herds that make up the Nation's dairy cattle population.

THREE PLANS FOR KEEPING RECORDS

One of the three National Cooperative Dairy Herd Improvement Program plans—the Standard DHIA, Owner-Sampler, or Weigh-a-Day-a-Month—is designed for your herd.

Choose the plan most satisfactory to you. Remember that although this recordkeeping costs, it really pays.

Standard DHIA

The Standard dairy herd improvement association (DHIA) recordkeeping plan is the official plan. It is the only plan that provides records that are eligible for use in sire and cow evaluations.

When you join your local DHIA, your herd is assigned a herd code number.

The association supervisor visits each herd in the association once a month. During evening milking, he weighs feed consumed and milk produced by each cow and saves a small sample of her milk. He follows the same procedure during the milking the next morning. He tests the milk samples for butterfat, or has them tested in a laboratory.

The weights and tests for 1 day are used to calculate each cow's milk and butterfat production for the month. At the end of the year a record summary for each herd is made.

Numerous studies have shown that yearly records based on weights and tests for 1 day each month are within 2 percent of the actual milk production and 3 percent of the actual butterfat production.

EVALUATING SIRES

Sires are evaluated by the herd-mate comparison method in the National Cooperative Dairy Herd Improvement Program. The basic principle of this comparison: A sire can be evaluated by comparing his daughters' production to the production of other sire progeny groups that were fed and managed under the same conditions. Herd-mate comparison is superior to the previously used daughter-dam comparison, because it minimizes the importance of production differences from year to year and from herd to herd.

The herd-mate approach is more reliable than that of the daughter-dam, because it adjusts for the following factors for each sire: (1) the number of herdmates that each daughter has, (2) the number of daughters of the sire, and (3) genetic differences between herds.

Sire summaries are provided by the U.S. Department of Agriculture on a quarterly basis. Each sire in the summary has at least

five progeny. These progeny are production tested and have production-tested herdmates. Summaries of individual sires are distributed to: (1) extension specialists in charge of testing in each State in which a sire's progeny is represented, (2) national breed associations, and (3) in the case of bulls used for artificial insemination (AI), to the AI organization that owns the bull. Summaries of all sires evaluated in the program are also available.

Cow summaries are also provided semiannually by the U.S. Department of Agriculture. These summaries are based on a combination of the cows' milk and butterfat yield (as compared to their herdmates) as well as the transmitting ability of their sires (daughters compared to herdmates). The top 2 percent of the registered cows on official test are thus recognized, and many of them are used selectively in the development of better bulls.

The supervisor makes all entries in a herd-record book that you keep to use as a guide in managing your herd.

He also helps you keep breeding and calving records on your cows. These records are needed to indicate the breeding worth of sires used in your herd.

When available, registration numbers are used. Nonregistered animals are eartagged to establish

their identity. A lifetime record for each cow is thus developed.

The supervisor frequently can suggest the changes in feeding or management of the herd or individual cows that the records show are needed.

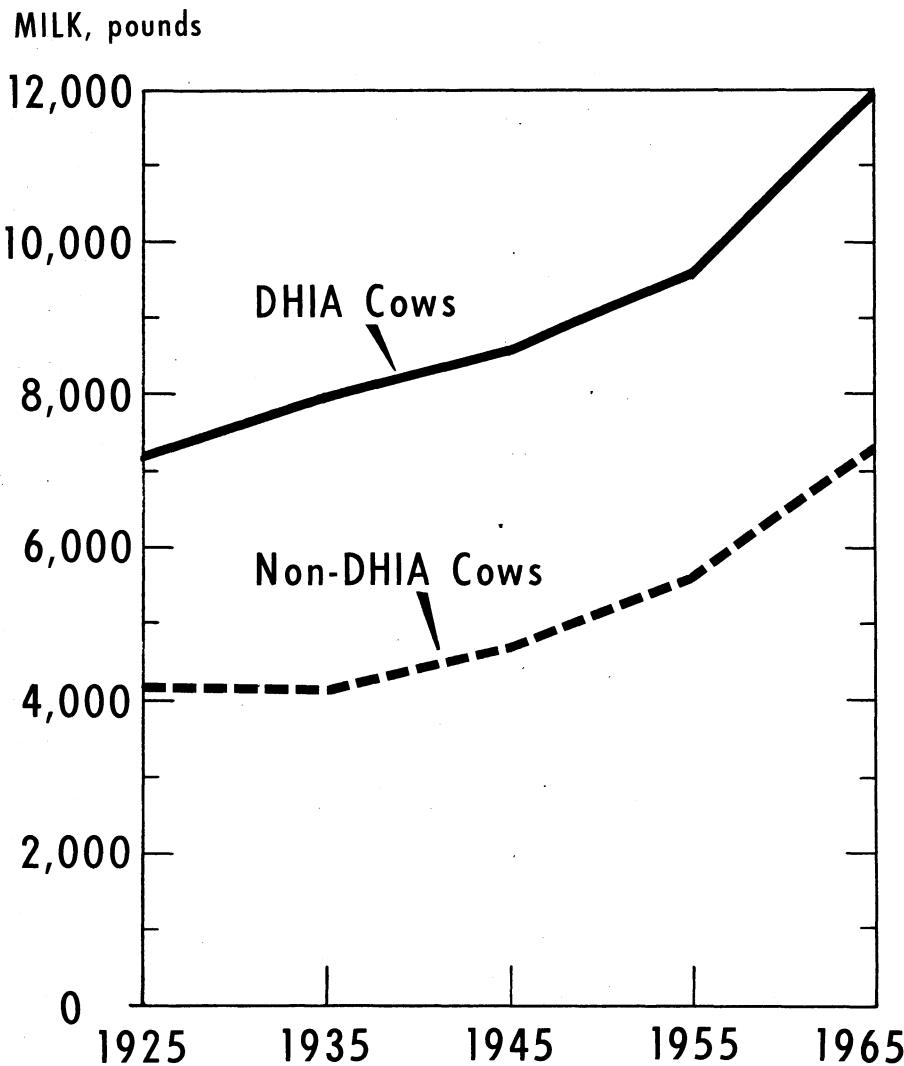
Approximately 2 million cows are enrolled in Standard DHIA in the United States. The average annual milk yield of each cow enrolled in this plan in 1965 exceeded that of

cows not enrolled by more than 4,000 pounds.

Owner-Sampler

In Owner-Sampler recordkeeping, the dairy herd improvement association supervisor leaves sample bottles and record sheets at your

farm each month. You weigh the milk from each cow in your herd and save a sample for testing. The supervisor picks up the milk weight records and the milk samples on his regular visit to your herd. He tests the samples for butterfat content and computes records for each cow



Every year, milk production of DHIA cows is greater than that of non-DHIA cows.

from your figures. The completed records—of cows and herd—are mailed to you or brought by the supervisor on his next visit.

The use of Owner-Sampler records is limited to your own herd. Because the weights and samples are not obtained by a disinterested person (the association supervisor), these are treated as private records. The records are not used for summarizing sires, and they are of limited use in selling surplus stock.

You can use Owner-Sampler records as a guide for: (1) feeding individual cows according to production by recording the amount of grain fed each cow and the amount of forage fed to the herd, (2) culling the low-producing cows, and (3) selecting cows whose heifers should be raised for herd replacements.

Owner-Sampler records can be used for starting an improvement program in many dairy herds. But as plans for building your herd develop, you may want to place your

herd on Standard DHIA to receive full benefit of the testing program.

Nearly 900,000 cows in the United States are enrolled in this plan.

Weigh-a-Day-a-Month

The Weigh-a-Day-a-Month record plan is designed to help you obtain private, simple-but-adequate record information to help you improve your dairy herd. Only the milk yield is recorded. No milk samples are taken; average butterfat production of the herd is obtained from the monthly milk check. You take the milk weights of each cow in the herd—morning and evening—on the 15th of each month. Then you record these weights on a special form you can obtain from your computing service (your county agent can tell you where your computing service is), and return the form for calculation of monthly records. Completed monthly reports for individual cows and for your herd are mailed to you.

HOW TO JOIN

To join any of these plans, see your county agricultural agent or your State extension dairyman.

The Standard Dairy Herd Improvement Association plan provides you with the most complete record possible on your cows and herd. When you join the Standard DHIA plan, you also join the local dairy herd improvement association. You sign a membership agreement covering the rules of Standard DHIA recordkeeping and the schedule of fees to cover the cost of DHIA recordkeeping. (Ap-

proximate cost is 45 to 55 cents per cow per month.)

The Owner-Sampler plan of recordkeeping offers you the most economical way to get milk and butterfat production records from a calculating service.

A Owner-Sampler plan usually is operated in conjunction with the Standard DHIA plan.

You sign a membership agreement to weigh and record weight of milk of each cow each month, take milk samples for testing, and make

Steps required in each of the three plans in the National Cooperative Dairy Herd Improvement Program

Standard DHIA	Owner-Sampler	Weigh-a-Day-a-Month
Supervisor weighs milk.....	Owner weighs milk.....	Owner weighs milk.
Supervisor weighs feed.....	Owner weighs feed.....	Owner weighs feed.
Supervisor enters figures.....	Owner enters figures.....	Owner enters figures, including average butterfat for herd from milk check.
Supervisor takes milk samples.	Owner takes milk samples.	
Supervisor handles forms.....	Supervisor picks up forms.	Owner mails forms.
Supervisor or central laboratory tests milk for butterfat.	Supervisor or central laboratory tests milk for butterfat.	
Computing center calculates official records.	Supervisor or central office calculates unofficial records.	Central office calculates unofficial records.
Supervisor eartags animals.....		
Breeding record is compiled.....		
Production records used in sire-evaluation program.		
Supervisor helps owner use records to improve his herd.	Owner uses records to improve his herd.	Owner uses records to improve his herd.
Cost: 45 to 55 cents per cow per month on central processing.	Cost: 28 to 38 cents per cow per month on central processing.	Cost: About 10 cents per cow per month on central processing.

arrangements to pay the fees. (Approximate cost is 28 to 38 cents per cow per month.)

The Weigh-a-Day-a-Month plan requires as little time and effort of a dairyman as is consistent with helpful recordkeeping. You agree to weigh and record the milk yield for each cow once each month and pay a year's fee in advance for recordkeeping on your herd. (Approximate

cost is 10 cents per cow per month.)

Hiring someone to weigh the milk from each cow is permissible under the agreement. The purpose in having the dairyman weigh the milk is to save him money.

Your county agricultural agent can give you additional information about any of the three plans of recordkeeping.

The National Cooperative Dairy Herd Improvement Program provides organized, methodical record-keeping plans that dairy farmers can use to improve their herds.

The program is coordinated by the Agricultural Research Service of the U.S. Department of Agriculture. It is carried out in cooperation with the Federal Extension Service and State extension services.

More than 1,400 local associations of dairy farmers, milking approximately 3 million cows, participate in the program on a self-supporting, nonprofit basis. Many of the local and county associations have formed State associations. A National Dairy Herd Improvement Association was formed in 1965.

The National DHIA Coordinating Group was also formed in 1965. It was established for the purpose of providing broader industry representation and administering such matters as policy, rules, and regulations.

Most of the records are processed through State or regional computing centers where herdbook and other related services are provided on a monthly basis.

A nationwide sire-evaluation program has been part of the national program since 1935.